THE VETERINARY RECORD

A Weekly Journal for the Profession.

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The Foot-and-Mouth Disease Outbreak.

No spread of the disease has taken place for some weeks. The first affected lot have quite recovered, others have been slaughtered, and all the infected premises thoroughly cleansed and disinfected. We may conclude that the outbreak is stamped out, and that the restrictions on movement of animals will very shortly be removed. The stockowners and salesmen of Norfolk have not shown such patience under regulations as might have been expected in a district where all are aware of the danger which existed. If the restrictions are removed during the next few days there is every reason to hope that no great risk will be entailed, but it is certain that had liberty been given earlier danger would have been courted. For the sake of the County and of the whole country the restrictions enforced were essential to safety.

The Board of Agriculture deserves great credit for having stayed the spread of this outbreak of foot-and-mouth disease. It would have been generally discredited if it had yielded to the hasty clamour of interested persons and permitted an infectious disease to have escaped all over the kingdom.

A Public Health (Amendment) Bill.

On April 5th this bill is down for second reading. Its object is alleged to be "to ensure that none but properly qualified men should be appointed as sanitary inspectors." This is a most desirable object, but the Council of the R.C.V.S. should give attention to the Bill lest it contain some clause antagonistic to veterinary interests. From *The Meat Trades Journal* we quote the following reference to the Bill:

"In the eyes of the Local Government Board it is only requisite to have a practical and scientific expert to deal with food products after somebody has been poisoned, and when exact analysis becomes a judicial necessity. With the single exception, we believe, of the London Corporation, there is at the present moment no such appointment as a legally recognised "Meat Inspector." There are "Veterinary Inspectors," "Sanitary Inspectors," and "Inspectors of Nuisances," but no Food or Meat Inspectors. Such an anomaly could only exist in a country where cattle and meat are dealt with by two separate and distinct Departments, and where Veterinary questions are relegated to military and marine officers."

These anomalies we fear will continue until a Consolidated and Amended Public Health Act is passed.

An Illegal Appointment.

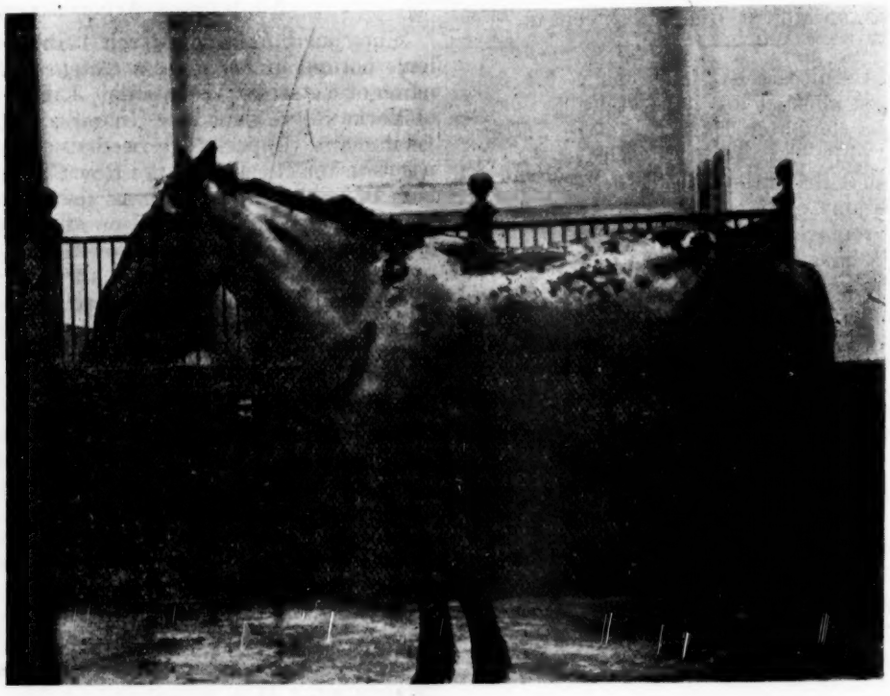
Since our number of March 17th went to press we have noticed in *The London Gazette* of March 9th the name of Veterinary-Lieutenant J. P. Spanton, Duke of Yorks Royal Canadian Hussars, to be Veterinary-Lieutenant, Imperial Yeomanry. There is no such name on the Register of the Royal College of Veterinary Surgeons, so we presume that this gentleman is in possession of a Canadian or an American qualification, and in any way the appointment is contrary to paragraph 40 of the Yeomanry Regulations. It appears that such an appointment is a matter of interest to both the schools and the profession. If this appointment, as notified in *The London Gazette*, holds good in the military service of the Government would not a similar notification also hold good in a civil capacity, such as under the Board of Agriculture or Irish Privy Council, and does it not remove the ground from under the feet of those who hold that only M.R.C.V S. are fit to act as meat inspectors?

It would appear to us that there is a distinct line drawn between the registered and non-registered practitioner as in the medical profession, in fact Section 13, Sub-section 3 of the Act of '81, distinctly defines what is a recognised diploma entitling to registration. If a person *not* on the Register can be appointed to a Government post, civil or military, by virtue of appearing in *The London Gazette*, we would ask where is the line to be drawn, what is the value of the qualification that is to be accepted.

The logical conclusion to arrive at, if this appointment is allowed to hold good, is that a candidate for a Government appointment, either civil or military, is wasting his time and money in going through the long and expensive course required by the R.C.V.S., and that if he has interest he can attain his end just as well by obtaining some cheap foreign or colonial qualification which is not a recognised diploma as defined by the Act of '81. This illegality must lessen the already diminishing numbers of the students at the colleges and render it more difficult to live than it even now is. We think that menace to both the profession and the schools is a matter to which the Council might well devote their attention, or a precedent will be established. As the election of Council is shortly coming on perhaps some candidate might take up this question of encroachment on our legal position.

It may be said that all this is true and in peaceful times important, but that now, when the Army Veterinary Department is out of joint we should overlook any little departures from the correct. We cannot accept such an excuse. The law is clear, and there are still a sufficient number of men with diplomas to fill all vacancies.

There is however a partial explanation of the objectionable appointments. The two men with alleged Canadian certificates are not officers in the Army Veterinary Department. The War Office apparently gave to the Managing Committee of the Imperial Yeomanry a free hand in collecting horses, and this freedom was extended to collecting their Veterinary officers. If this be correct we have only to blame the stupidity of some local colonel who obliged a friend in disregard of law, etiquette or efficiency. The facts should be obtained by a question in Parliament, and then we should probably have no cause for future complaint.



Mr. Wallis Hoare writes—

I enclose you a photo. of a peculiar case of skin disease that I have under treatment at present.

The hair has fallen off in large patches all over the body, and in parts there is a large amount of scales thrown off. There is no exudation or appearance of vesicles. On the neck and shoulders the skin appears as smooth as if shaved. There is no irritation and the horse is in good health.

The animal was lent by its owner for three weeks, and returned in its present condition.

I thought the case may be of interest to readers of *The Record*, and should like to have any opinions as to diagnosis.

Zebra Hybrid Horses.—At the Highland Show of last year one very novel and attractive feature was the exhibition of the zebra hybrids of Professor Cossar Ewart. So interesting and instructive was this exhibition that the Prince of Wales specially asked the Professor to give an exhibition of the zebra hybrids at the York "Royal" this year, and the Professor readily agreed to do so.

Inspectorship of Edinburgh Byres.—The Edinburgh magistrates appointed Dr. Williamson, sanitary inspector for the city, to be inspector of byres, under the Cattle Sheds in Burghs (Scotland) Act, of 1866, in succession to Mr. Young, who recently left this country to take up a veterinary appointment in New Zealand.—*N.B.A.*

DOURINE, MALADIE DU COIT, OR EQUINE SYPHILIS.

By Surgeon-Major G. Schneider, Bacteriological Laboratory, Military Hospital, Oran, Algeria; and Veterinary-Surgeon M. Buffard, French Army, Oran, Algeria.

History.

A parasite of the genus trypanosoma was discovered by M. Chauvrat in the blood of a stallion (*1*). In 1896 Dr. Rouget noticed the same in a stallion suffering from dourine. This writer, from the analogy he observed in dogs and rabbits inoculated with trypanosoma and horses suffering from dourine, promulgated the hypothesis of the probability of a relationship between one and the other. (*2*).

(1) M. Chauvrat (*Recueil de Med. Vet.*, 1896, p. 344) records a case of pernicious anæmia, which he describes as surra, but which we are of opinion was dourine in the last stage. This case, however, had been ill a long time and was only under observation five days before death.

(2) "Contribution to the Study of the Trypanosoma," by J. Rouget (*Annales de l'Institut Pasteur*, December, 1896, page 716.

Nothing further was done in the matter until July, 1899, when we recorded (*3*) that we had observed a parasite in the blood of a stallion suffering from dourine, and dogs experimentally inoculated that we considered to be a trypanosoma (*4*). This parasite was obtained from the characteristic patches. Later on we again discovered the same parasite in blood taken from the patches of a case of dourine, and also in blood from the vessels of a donkey.

The idea that this trypanosoma is more an extraneous organism that accidentally has obtained entrance to the system of animals already ill is not tenable, after the clinical facts we record and those discovered in connection with the well known disease surra in India, and nagana or "tsetse" in Zululand, which it is clearly proved to be the cause of. The theory that the trypanosoma was the cause of the disease which was founded on its detection in the blood of affected horses, and in dogs inoculated therefrom, of symptoms resembling mal du coit (*5*) was open to objection, but this has been overcome by reproducing the disease in the dog and then back to the horse, when typical dourine was established. We also observed in dogs, both male and female, the identical symptoms seen in the horse.

We wish to convey our thanks to Dr. Bergeron, Professors Nocard and Railliet, and M. Vallin, for the assistance and advice they have given us in our work.

The Clinical Appearances of Dourine.

Symptoms.—The symptoms described are those that have come under our own observations and those of several veterinary surgeons who have been many years resident in Algeria.

The Horse.

Dourine in the horse assumes a chronic and acute form; the former is the most common.

Chronic Dourine.—This form resolves itself into three distinct phases, the differences being well marked.

1st. phase. The œdematous. The first symptoms are visible the 15th to 20th day after the infective coitus and consist of slight œdema of lower portion of the prepuce. This is exceedingly likely to escape the attention of the attendant unless he is very observant in the first stages. It extends gradually to the whole of the prepuce, the scrotum, the inguinal region and even along the abdomen to the chest. Usually the swelling is cold and painless, but sometimes it is hot and tender. The glans penis is infiltrated and frequently in a state of semi-erection, and the superficial inguinal glands enlarged. In some cases this œdema is confined to one side only.

The appetite always remains good, temperature varies between 100-101° F., and coitus is easily performed. In about a month from the appearance of the first symptom the general engorgment is absorbed, becoming localised in the generative organs. This sometimes almost totally disappears, only the glans remaining infiltrated.

At this stage the loins are sensitive to pressure, giving way under the weight of the rider. The animal is distressed after slight exertion, and begi ns to lose condition.

In a very few cases these primary symptoms are not developed, the first observed being those of the second period "the characteristic patches." (*6*).

2nd stage. Patches. This is characterised by the only pathognomic symptom of the disease, *viz.*, the characteristic patches. They appear on the 40th to 45th day after infection. They have the appearance as if a disc of metal had been slipped under the skin, the diameter varying from a five shilling piece to the size of the palm of the hand. The hair stands up on end, and the skin is somewhat thickened. They are generally more distinctly marked on light than dark coloured horses, indeed with such it is usually necessary to stand so as to catch the light to be able to see them at all, and in some cases there is nothing more than a slight unevenness of the hair. In certain cases there is slight œdema such as is seen after an injection of mallein, with extrudation of a small quantity of serum which mats the hair together.

The appearance of the patches is sometimes preceded 24 or 48 hours by a crop of papules, which disappear in the course of the day without leaving any trace behind them, or at the most only a very slight extrudation of serum which cause a few hairs to stick together.

The duration of the patches is very variable, they may last five or eight days or disappear in the course of a few hours. If they are evanescent a short trot or even a few paces at a walk will cause them to disappear. This is induced by muscular contraction and afflux of blood to the skin, by which the embolism caused by the parasite is broken down and carried off in the blood current. They become more plainly marked after drinking, or if the body is sprinkled with water.

The patches are not always the same. Thus in the case of the stallion "Hezyl" at the commencement the characteristic patches appeared, lasting two or three days, followed by a crop that were not so clearly defined, which appeared and disappeared in the course of 24 hours, and at the end of the case there was only slight roughening of the hair. In certain cases the patches and roughening existed together. Their symptoms are usually seen on the sides and croup, less commonly on the neck, thighs, and shoulders.

At this stage emaciation progresses rapidly, the patient remaining down for a long period and getting up with difficulty, as if the hind quarters were paralyzed, and if moved the hind feet are dragged along the ground and the fetlocks knuckle over. The synovial bursæ and sheaths of the hind extremities are in a dropsical condition, and the inguinal submaxillary and pectoral glands become enlarged, the first mentioned frequently suppurating.

The appetite remains good, in fact food is consumed with avidity; the eye is fixed and staring, the

(3) Note on a parasite discovered in the blood of animals suffering from dourine or maladie du coit, by Dr. Bergeron, Academie de Médecine, 25th July, 1899.

(4) Professors Nocard and Railliet, have confirmed our opinion.

(5) Contribution to the Study of Dourine, horse series, Academie de Médicine, 19th Sept., 1899.

(6) Can be observed in the stallion.—"Hezyl."

temperature rising to 102° F. in the evening and falling to 100° F. in the morning. There is often bronchitis, with a dry harsh cough. Coitus is impossible.

3rd stage. Consists of great anæmia and paraplegia. In this stage the mucous membranes are pale in colour, and great emaciation sets in, the animal not being able to move without support. The appetite becomes irregular and capricious, superficial abscesses that are very indolent in healing form, and there is often conjunctivitis and ulcerative keratitis. The urine is thick, and passed with some difficulty. There is a crackling sound given off from the joints with the slightest motion, and fractures are frequent. Later on paraplegia is complete, the animal falling down and dying. There is apparently a loss of sensation, as there appears to be insensibility to pin pricks or blows. The duration of the case varies from two to ten months, and according to M. Nocard is more rapid in summer than winter.

In the Mare.

The symptoms are less marked in the mare than the horse. The first are a uni or bilateral swelling of the vulva which extends up to the anus. The mucous membrane is of a deep red colour with a discharge of sticky mucus, which is more apparent after urination. At the time the patches appear, or even a little before, there is often weakness, or even actual lameness of one or more of the hind limbs. The course of the disease is the same as in the horse, but the duration of the case is usually longer.

Acute form.—In this form the primary swellings are followed by sudden acute paralysis with or without an attack of vertigo which carries the animal off in a very few days.

Acute dourine is more common in the mare than the horse and usually paralysis supervenes a few days after the first appearance of the patches.

The Ass.

The symptoms of dourine in the ass both male and female are obscure, and frequently the first cause to arise suspicion that a jack is affected is that the disease becomes noticeable in the district in which he covers. The Arabs maintain that one attack gives immunity and that a breeding jack that resists dourine is immune, and therefore of increased value. They say they can recognise this immunity by a cicatrix inside the ear.

The only symptom that can, however, be relied upon is an œdematous condition of the extremity of the penis which causes obliteration of the folds of the mucous membrane at the orifice of the urethra, which appears as if it was turned inside out. This is particularly clearly seen when the penis is in a state of semi-erection.

Œdema of the prepuce comes on but slowly, and the patches are very rare in the ass. (7).

In jacks which do not resist the disease—which is not common—its progress is the same as in the horse. Emaciation is very pronounced, also engorgement of the sheath and scrotum, and paralysis is early.

POST-MORTEM.

Gelatinous patches under the skin, intense inflammation of the free portions of the urethra in the in the horse and the whole of the genito-urinary mucous membrane in the mare. The testicles are softened and considerably reduced in size. The superficial inguinal glands are enormously enlarged and contain a quantity of greyish serum. The deep-seated inguinal glands are also sometimes enlarged. There is very frequently hypertrophy of the spleen. As a rule the spinal cord is normal (Buzy), but we have, however, detected softening on two occasions.

PROPHYLAXIS.

Numerous observations made in various Algerian breeding establishments have clearly established the fact that it is the last coverings during the season that are the most dangerous, and that when stallions become affected it is always at the end of May or beginning of June, that is to say in the last month of the covering season (8), and it would therefore appear that stopping all coverings after May 15 in the districts where dourine is an annual occurrence would be effective. Another measure would be the veterinary inspection of all jacks used for mule breeding, none being allowed to cover without a certificate, as it is certain that the jack, although showing great power of resistance to the disease himself, really contaminates the mares, which, if they prove barren, are put to the Government stallions who in turn become diseased. Any mare that is lame behind should also never be used for breeding purposes. The only sanitary precaution that is taken it to wash the penis of the horse after coitus. This, however, is a very illusive precaution, for it is only the glans that the water can come in contact with, the rest of the organ when in a quiescent state being thrown into numerous folds that cannot be reached.

DIAGNOSIS.

When the patches appear it is easy, but in the earlier stages of the disease when there is only localised œdema of the prepuce or glans, it is extremely difficult to give an opinion; but the discovery of the pathogenic agent of the disease will no doubt in future facilitate it, as the microscopic examination of the blood taken from the œdematous swelling of the prepuce or penis will reveal the trypanosoma in either the adult or one of the other forms which will be described later on. The inoculation of a dog is also a great help. A few drops of blood taken from the diseased part and injected under the skin of the abdomen of the dog will reproduce the disease, even if the parasite cannot be discovered in the blood of the suspected horse. We have already in a communication on "Experimental Dourine in the Dog," described the method of inoculation and the development of the disease in that animal, and in the

(7) We have, however, recognised them in a jack sent to us by MM. Bremond and Gorce, Veterinary Sanitary Inspectors of Oran.

(8) This is accounted for by the fact that mares who have not held to the jack are brought to the Government remount stallions in the month of May, when it is seen that the cover has been barren.

course of this paper we have further treated on this matter.

As with the mare, the dog can be inoculated with the vaginal mucus, or blood taken from the inflamed mucous membrane of the genito-urinary organs. If there is no result from microscopic examination of fresh blood, stained preparations should be made, and several specimens will probably have to be examined before the parasite is detected.

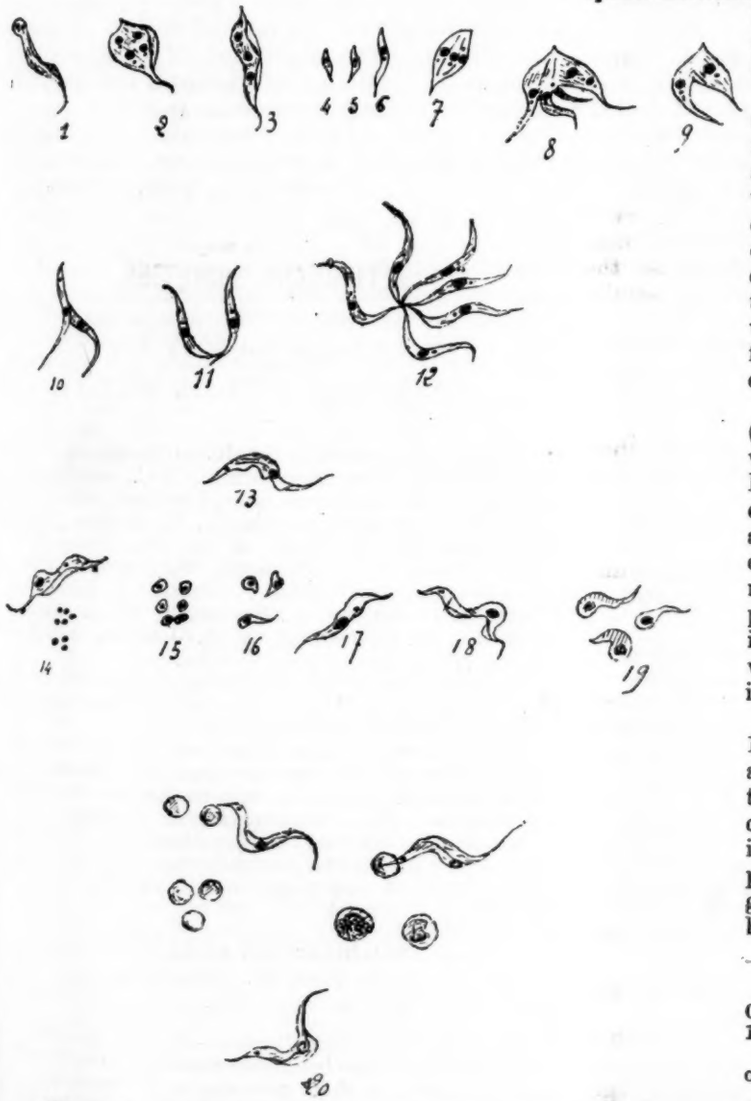
Treatment.

We have given sulphate of quinine in 1 to 1½ dram doses daily in an electury for eight days, then leaving off for ten days and repeating. The drug no doubt had a beneficial result, there was a cessation of emaciation, the temperature remained normal, and the urgent symptoms appeared to be arrested, but we were unable to avert the fatal termination. Treatment, however, was not commenced until the patient was in an advanced stage of disease.

Perhaps some results may be obtained from serotherapy. Certain observations and certain facts obtained in the course of our experiments are sufficiently encouraging to warrant further research in this direction.

The Parasite of Spontaneous Dourine.

The characteristics of the parasites from the blood of the two stallions (Canigou and Hezyl) and an ass (case II.) suffering from dourine, are identical with those described by M. Rouget in 1896, and they are clearly an inflagellate infusoria, family cercomonadides, genus trypanosoma, and a species probably closely allied to the T. Evansi, the parasite of Indian surra, or the T. Brucei, the reputed cause of East African nagana or tsetse. It has an eel-like appearance, is extremely mobile, moving in every direction, sometimes with serpentine movements, sometimes with a sudden jump after arching the body and letting it straighten out like a spring, sometimes with a spiral movement, the body being twisted round its long axis. We have seen this mobility exist for 48 hours in a preparation kept at 96·8 F.



Different forms of the Trypanosoma. Leitz obj. immers. 1/12 oc. 4. (tube Baissé).

The slackening of the movements after one or two hours allows the parasite to be studied. It appears to be a spindle-shaped mass of protoplasm with a surrounding membrane that is corrugated into numerous folds. One end is furnished with a sort of snout containing a small translucent mass, the other with a long flagellum, and which has sometimes in it an oval refractive corpuscle, smaller than the one in the snout.

Contrary to the opinion of Butschli (*9*) and Danilewsky (*10*), and which with certain reservations is shared by Rabinowitsch and Kempner (*11*), according to whom the flagellum is the anterior end, we consider that the other is, as it always contracts and moves first. The high contractile property of the body of the parasite is shown by the folds and hollows into which the limiting membrane or skin is thrown during movement.

The dimensions are 20 to 30*u*. × 1·5*u*. to 2*u*., but certain individuals are smaller, these are probably ones that have not reached maturity. A curious phenomenon that is observed is the expulsion from the body of the parasite of a number of refractile granules which are formed in its body, and which themselves are en-

(9) *Butschli*, Bronn's. Klassen, und Ordnungen des). Thier. Reichs; Protozoa, 1889.

(10) *Danilewsky*. Comparative parasitology of the blood. Charkoff 1889.

(11) *Rabinowitsch* und *Kempner*. Beitrag zur Kenntnis der Blutparasiten, Spiziell der Rattentrypanosomen. Zeitschr. fur Hygiene und Infaktionshrankh 1899.

dowed with a Brownian movement. These granulations *(Fig. 14)* accumulate in the form of chains at one extremity or the other. The parasite after 48 hours undergoes various modifications such as swelling at one extremity or resolving itself into a more or less rounded mass. It then loses all power of motion, becomes granular, and breaks up. (*Fig. 19*).

Although numerous media have been tried we have failed to obtain any successful cultures, and more especially we would remark that we have been unable to confirm the experiments of Chalachnikow, who found that the parasite developed in the serum of the dog.

The parasite stains well with methyl. blue and thionine phenique after fixing the preparation with equal parts of alcohol and æther. If strong solutions are used, the anterior granule is deeply stained, and appears as a very sharply defined point. The oval corpuscle at the other end is less deeply coloured. The protoplasm takes on a uniform stain except in the immediate neighbourhood of the bodies at the ends, which have a light ring round them. Double staining by Laveran, Czenzunke, or Romanowsky's (*12*) processes gives good results. By the last method both the globule and corpuscule are coloured red, representing the nucleate and mass of chromatin described by Rabinowitsch and Kempner. We remarked that this mass of chromatin, corresponding to the refractive corpuscule of the posterior extremity, is not always clearly visible, and that it is often situated in the middle portion of the parasite. (*Fig. 13*)

The detection of the parasite in the animal that is naturally infected is not easy. It can be discovered in the blood taken from the middle of the patches, but elsewhere it is exceedingly rare to find it. It is absent from the serum that exudes after puncture of the œdematous swellings, unless it contains blood, and the more there is the greater the number of the parasites present. These facts appear to point out

(1) That the trypanosoma is a true blood parasite, and

(2) that the patches and swellings are the results of embolisms caused by masses of them obstructing the small vessels.

The parasites are most easily discovered in the patches when they first appear, and on this the successful discovery of it is dependent. As the patches extend the organism becomes more scarce, and a few hours after they reach their full size they disappear. They remain some time in the œdematous swellings, especially when they are extending, but as soon as the enlargement becomes stationary or begins to subside they disappear, which also seems to prove that these engorgements are due to parasitic thrombosis, due to the dual properties exerted of mechanical obstruction and a power it possesses of coagulating the blood. (*13*)

The trypanosoma gives exit to the mobile granules in the patches and œdematous swellings.

(12) *Romanonowsky*. Zur Frage der Parasitologie und Therapie der Malaria. Dissertation, St. Petersburg, 1891.

(13) We will further on describe the post-mortem appearances of a horse (experiment No. 1) in which the pudii veins were obliterated with old clots.

At the commencement of an attack of dourine we have always noticed that there are a large number of parasites, as well as acute urethritis in the stallion and vaginitis in the mare, and it is therefore probable that primary infection and multiplication takes place in the urethral and vaginal mucous membranes. In the last stages of the disease, especially when the patches have vanished, the parasites appear to be few in numbers. The microscopic examination of the blood reveals but few, although it is certain that such blood is virulent. The parasite escapes observation either by being present in only small numbers or else undergoing some change of form in the process of evolution.

When the trypanosoma is observed in blood from a vessel great changes in it will be noticed. In many specimens it will be seen fixed by one of its extremities to a red blood corpuscle which it freely moves or shakes. In general it is attached by the anterior part which is embedded into the corpuscle's substance, and after a time it leaves go, moves about in the blood plasma, and then settles on to another one (*Fig 20*). The destruction of the corpuscles is indicated by the numerous fragments that are visible in the field of the microscope.

(To be continued.)

From *Recueil de Médecine Vétérinaire*, Feb. 15, 1900.

JOSHUA A. NUNN, Vet.-Major.

VETERINARY SOCIETIES.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

A meeting was held at the Royal College of Veterinary Surgeons, Red Lion Square, W.C., on Thursday, March 1st, Mr. Matthew Clarke, President, in the chair. There were present: Messrs. W. L. Harrison, H. H. Whitlamsmith, H King, P. Smith, Sidney Villar, Major Nunn, Prof. Pritchard, W. Perryman, H. A. MacCormack, S. H. Nye, F. Wright, F. Samson, J. Rowe, A. L. Butters, L. Savournin, W. A. Stainton, J. Baxter, A. E. Gostling, A. A. Johnson, and E. L. Stroud (Hon. Sec.), and one visitor.

On the motion of Mr. MACCORMACK, seconded by Mr. HARRISON, the minutes of the previous meeting were taken as read and confirmed.

The SECRETARY read letters of apology for non attendance from Mr. Simpson and Mr. Slocock. Also letter from Mr. Mulvey in reply to the letter of thanks of the Society for his son's services as secretary.

Mr. SAMSON directed that the attention of the Council should be called to the gradually decreasing attendance during the last two years, and if possible to find a remedy.

ADDRESS ON SUTURES.

By PROF. W. PRITCHARD.

Mr. President and gentlemen,—My principal point in bringing this matter before the meeting is to say so much, and no more, as shall give rise to a discussion. The word "sutures" means "sewing," or "a stitch," and I am going to use the word to-night with regard to dealing with wounds. In sewing wounds many modes are had

recourse to; I shall only deal with a few of them, the manner in which it is be done, the results which follow, and whether the sutures should be left permanent or otherwise.

I have in my mind more particularly the wounds which we have to deal with in connection with horses, though of course we have to deal with wounds in all kinds of animals, or at all events of quadrupeds. There is one thing I would advise in connection with wounds in horses, and I want to lay particular stress upon it. However big the wound may be, if the parts are brought together fairly, the sutures should not be left in more than 24 or at the very outside 48 hours. I know this will meet with some contention, but I do not care about that. You will find from experience that if you bring the parts together for 24 or 48 hours and then remove the stitches or sutures, although the wound may gape very considerably the parts will come together exactly where you stitch them in the first instance. I have in my mind two cases, one of the quarter of a horse where I should think three or four pounds of material was absolutely down away from its original position. The parts were brought together by common sutures, which were taken out and the wound healed perfectly well, and the parts came together exactly where they were stitched. Another case was in the forearm of a horse, and I should think there was at least 2 lbs. of material hanging over the knee. I operated on that; I brought the parts together, and I took the stitches out in 24 hours afterwards. That wound healed, and the parts came together exactly where I had stitched them. You will ask what is the benefit of this. I will tell you. As you go about the country you will see horses that have had wounds stitched up, and you will see where the stitches have been, and a mark, generally about an inch in length, where those stitches have been put in, and instead of being taken out as I suggest and advise they have been allowed to slough out. That is one point in connection with sutures which I think should be thought of, and I am certain that it is advantageous after 24 or 48 hours to take the stitches out.

Just a word or two with regard to the character of the stitches. The horse's skin as a rule, taking the general surface of its body, heals by suppuration and not by first-intention. But there are parts of his body where sutures are used or should be used and healing does take place by the first intention. In those cases I object to using ordinary stitches. For example, take a torn eyelid. If you stitch that in the ordinary way with a thread and needle you will not get as good a union by first intention as if you have recourse to other means. And I think there is no suture you can use in connection with a torn eyelid which is half so serviceable as the pin and a little bit of tow or thread—I prefer tow—twisted round the edge of the pin. Here I should leave the suture for a little more than 48 hours, but I should have recourse to it in a way that would enable me absolutely to remove the stitch or suture without parting the edges of the skin. I should not use an ordinary pin, but there is a pin made of steel which is easy to insert, and having inserted it and twisted the tow round it it is as easily removed. It is advantageous to use because it easily pierces the skin; it is just as easy to twist round the little tow that you use, and bring the surfaces together, and it is just as easily removable, leaving the tow as a sort of bandage upon the part and keeping the part in connection.

Now I will tell you why that operation is successful as a rule, and why it is not sucsessful in other parts of the body. In the eyelid you have a very vascular surface, the skin which covers it, and you have a very vascular surface on the internal surface, the mucous membrane, and on account of the vascularity of the two surfaces you get Nature's endeavours twice—on the inside and the outside, and healing by the first intention readily takes place. Then we have other parts of the body where the skin is thin and where you have a double layer of it. Take for example a torn nostril. You have got a layer of skin on the outer side, and of course I need not tell you that it is an extremely vascular structure, and you have a layer of skin on the inner side of it just as vascular as that upon the outer surface. Bringing those two parts together in the manner I have described, you get Nature's efforts on both sides, and as a rule healing by the first intention or by the adhesive process.

With regard to the kind of suture, we have thread, silk, wire, catgut, and a number of others. Perhaps I am an old-fashioned surgeon in this respect, but I do not mind that—I have never used any suture with a needle equal to thread. There is a good deal said about cutgut sutures and their absorption, but I have never seen what I have read about; although I have tried them over and over again. I do not say it does not take place, but if I were stitching a big wound up to-night I should use good brown thread. I do not like wire. It very frequently breaks, and if it does not break there is a difficulty in taking it out. You might expect that I should say something about the wounds we make in operations, and I have in my mind just now neurotomy. I know some clever veterinary surgeons, in performing the operation of neurotomy, put a stitch in the wound which they make in the leg to remove the nerve. You take my advice, gentlemen, when you perform neurotomy you won't make a wound sufficiently large in the skin to need a suture. And if you do, put the edges of the skin together with a pin, twist a little tow round it, and in 24 hours take it out again.

I hope I have said sufficient to create a discussion. I do not believe in coming to these meetings and saying everything that can be said. If you will cross-examine me worse than I was cross-examined to-day in a Court of Law I shall be only too pleased.

Discussion.

Major Nunn said he had always used the human hare-lip pin. He had also had some improved ones out in India, made of nickel steel. In the climate of India steel was liable to rust in the damp weather. He cut the sharp points off, because he had noticed that if any effusion took place the point of the pin lying against the skin would cause some slight irritation. It made no difference in withdrawing them again. He wished to ask if Prof. Pritchard had had any experience in the Italian Florence plated thread, made out of hemp. He agreed with him as to the unsatisfactory results of cutgut sutures. He would like to know if any member had had any experience with fishing-gut as sutures. There was an article on the subject in *The British Medical Journal* of the 17th inst., by Mr. Charles Lockwood, of the Great Northern Hospital. He also asked if any member had had any experience with any of the mechanical sutures—screws and clamps such as Russell's sutures—deep-seated sutures. Perhaps, also, some information might be forthcoming upon mechanical means of support, such as trusses.

Mr. Rowe said that the india-rubber or gutta-percha bandage, used in housemaid's knee, would very well answer the purpose of a support, especially for the forearm and hock of the horse. He had used it for years with satisfactory results. The only objection was that it was rather expensive. He never dressed a wound until after trimming the hair off all round the edges. Frequently when the wound was healing it tended to curve in and make the very cicatrix which Prof. Pritchard had called attention to. Another detail which the Professor might have mentioned was that in order to bring the two parts together after they had been stitched a bandage was essential where it could be applied. In

dealing with dogs he invariably used catgut—harp-string catgut. He put it into a solution of glycerine, which might or might not have carbolic acid, and invariably had a roll or two at hand. He never castrated a cat without suturing it afterwards, his principal reason being that it pleased clients and prevented hæmorrhage.

Mr. SAMSON agreed with Prof. Pritchard as to removing the stitches from wounds in the quarters in 24 hours, because we generally got a profuse discharge. They were mostly deep-seated wounds, and if the stitches were not removed they would very soon remove themselves, cutting through the skin and leaving a very deep scar. He asked whether the lecturer had anything novel to say, after the stitches had been removed when we had three or four lbs. of protruding flesh, as to keeping it in. There was no bandage which would keep the two edges of the wound in their places, or keep that amount of flesh in. It did not always do to cut it out, one got a tremendous continuous discharge. He would ask Prof. Pritchard if he knew of anything which would stick to the skin to bind the two edges of the wound together after the sutures had been removed. The ordinary plaster did not stick, except for about two hours. He had used steel pins for years—but they rusted. He found great difficulty in removing them, and was therefore glad to hear of a new kind of pin which did not rust.

Mr. VILLAR said that practically the lecture was very similar to those they listened to 20 years ago at College, and many had since tested that information and found it quite right. At one's own infirmary it was quite possible to remove sutures in 24 or 48 hours, but in ordinary practice it took a bold man to sew a wound up one day and take the stitches out 24 hours afterwards. The client would wonder why the sutures were put in at all. What Prof. Pritchard had said about 48 hours was absolutely correct, the patient got no material advantage from allowing the stitches to remain in longer than that. The catgut which one bought for ordinary suturing was usually supplied in bottles, in carbolised oil, and was so saturated with disinfectants that it did not undergo any chemical change—it did not soften, which was essential to absorption. Fishing gut, on the other hand, was not preserved antiseptically in any way, and more readily became absorbed. He disagreed with the Professor as to wire; in the case of a large gaping wound where the tissues were very widely separated, and especially where there was a large bulk of muscular tissue torn, a good big wire suture was the very best thing one could use. There was usually a considerable separation. There was a good deal of difficulty when one was first called in in pulling the lips of the wound together. If one put wire through in half a dozen places in a wound six inches in length and cut the end of the wire, leaving the wire threads hanging, one could more readily, by bringing pressure to bear on the other side of the wound, draw the wire and fix it in position. If it could not be done on the first day, on the second day it could be done more readily, and the wire could be so twisted that it was quite possible to tighten or lengthen the individual stitches. Some veterinary surgeons made their stitches with a very small hold on the skin, almost like a hem of calico; others took a good hold of the skin and put the stitches farther apart. He would ask the Professor's opinion as to whether the stitches should be fairly close together—speaking of an ordinary incised wound—or whether he thought a small number of stitches with a deeper hole were the best to use. The nature of a wound had a great deal more to do with its healing than the use of any particular kind of suture had. He thought the clipping of the hair was a very important detail. In the operation of neurotomy he used to clip the hair off with a clipping machine, or perhaps not at all, but now he had the part washed with an ordinary shaving brush and removed the hair with a razor. The wound healed very much more rapidly when the hair was removed. Mention had been made of diachylon plaster; he had found it of no use. Even if one shaved the hair off, directly it began to grow the diachylon plaster became loose.

Mr. BUTTERS said he was much astonished to hear Prof. Pritchard recommend taking out sutures after 24 or 48 hours. That was contrary to his own experience with wounds. If it were a deep wound and the stitching up prevented drainage he would say do not close it at all. In that case there might be an advantage in putting the sutures in for 24 or 48 hours, but that was the only exception. He had seen wounds which had been stitched up by incompetent persons where no matter had been allowed to escape, in which case a very simple wound was transformed into something more serious. Another point was with regard to the character of the suture. He was very fond of metallic sutures, either in the shape of a pin or wire which made most admirable sutures for wounds met with in ordinary practice. It was soft and pliable, and the stitches could be shortened or lengthened very readily without interfering with the wounds, in fact he had seen wounds heal up entirely and never found it necessary to remove the sutures until the wound was completely closed. When the sutures were removed they only left an almost imperceptible mark. They did not slough out, but maintained their hold. They were easily taken out, and, if one got a needle with a screw eye they were very easily put in. There was a difficulty when one passed sutures through with a needle where it was doubled, and some horses were so restive that unless one got the suture through very quickly it was impossible to continue the operation. The use of the pin as a suture dated back a long time and could not be improved upon. In his young days it was used exclusively in an operation now dying out, that of bleeding in the neck. Not many veterinary surgeons could perform the operation with the neatness with which their forefathers did it. In that case the pin was the regular suture, with a little tow tied round it, either in the shape of the figure 8 or round, and allowed to remain three or four days, when the wound completely healed up. There was no better example of healing by first intention.

Mr. WRIGHT said he had used fishing tackle for some years—the dried silkworm gut. It was pliable and would hold well. He had tried pin sutures in the nostril, but the first feed the animal had he rubbed it out. If the wound were not too large he took a pair of scissors and snipped a piece of the nostril off.

Mr. PERRYMAN was of opinion that 19 out of 20 wounds were better not stitched. He agreed that in general practice one could not take the stitches out of a wound in 24 or 48 hours without probably losing the client. The only advantage of stitching wounds was to pacify the owner; he believed quite as close a cicatrix would be formed without the stitches. The only class of wound that bore stitching were the skin wounds where one got very little tension from the animal moving the limb. If one closed skin wounds and saw there was no loose hair, they would have a good chance to heal. Eyelid wounds were the best possible to deal with. If he could persuade the owner not to have a wound stitched, he would not stitch the majority of wounds. It was policy to cover up the wound as much as possible, even if it had to be done with a little cotton wool. Plenty of powder should be used.

Mr. HALL said he had found cane of advantage instead of a quill—two canes, one on each side—to keep the edges of the wound together.

Mr. SAVOURNIN said that the ordinary pin, made of steel, would go through anything, but would snap if one attempted to bend it. They would go through a stiff collar like cheese, and ought to go through a horse's skin

easily. The method he adopted for sewing up very deep wounds, to overcome the difficulty of weight which must come upon the stitches, was as follows. He put through the wound two stout tapes coming out on one side and going in upon the same side and then going across to the other side. The weight then came upon the skin and not upon the edge of the wound. He sewed up the edge of the wound in the ordinary way; the weight of the flesh came upon the tape and the ordinary stitches were used simply to keep the edges of the wound together. That method was also useful in gashes of the thigh or quarters.

Prof. PRITCHARD, in reply, agreed with Major Nunn's remarks as to thread and fishing gut. He was inclined to think that the saturation of the catgut in the antiseptic absolutely robbed the gut of the property which the surgeon needed, and therefore he preferred using fishing gut to the prepared gut. No doubt in some cases clamps were absolutely necessary: they were useful where ordinary sutures would be of no use. He did not attach much importance to cutting off the hair; in many wounds the hair which hung over the margin of the incised surfaces, clotted with blood, acted as a plaster, and he questioned whether in the majority of wounds it was advisable to remove the hair. That, however, was a matter of opinion. As castration of cats had been referred to, he would say that instead of having recourse to the use of the knife, slitting the scrotum, pulling out the testicles and cutting them off, if one took an ecraseur and put over the whole of the scrotum and took the two testicles with the scrotum off together one could castrate the cat without losing a spot of blood, and in about half the time.

The PRESIDENT: It will leave a wound, will it not?

Prof. PRITCHARD said it would not. Several speakers had spoken about leaving in stitches and supporting the wound. There was no necessity for that at all. It did not matter how big the wound was, if it were drawn together and the stitches taken out 24 hours afterwards, he would guarantee the wound would come back exactly where it had been stitched. As to the objections of employers, an employer was not on the same basis as a veterinary surgeon, and had not his knowledge. The surgeon acted from experience, and if the employer thought he was doing wrong, let him think so. Veterinary surgeons ought to be able to back up their opinion. Mr. Wright had spoken of wounds in the nostril and in the eyelid—the two wounds that he (Prof. Pritchard) most liked to deal with. As to cutting a piece of the nostril or eyelid off, either one or the other would be very bad surgery—shocking. He remembered a case where a very valuable horse belonging to Sir Walter Gilbey, a shire horse, had torn his nostril, and it had been allowed to heal with two flaps—the wound had healed and left a gaping portion in the nostril. He put the horse down and made a fresh wound. He skinned the inside of both edges of the original wound, and brought them together by pins. A fortnight afterwards the animal had simply a line where he had had a gaping wound. As for not being able to prevent a horse from rubbing his eye or nostril, he would kick a groom out of his yard that was not able to do it. One had simply to put him on the pillar-reins, feed him from a movable manger; and the two vascular surfaces in the eyelid and in the nostril would heal in about a week or ten days. As to the elbow, he would tell of a failure. If one heard more of failures and less of successes in our journals the probability was we should learn more. That failure had been the means of his bringing about many successes since. When he was acting under the late Professor Varnell at the college a pony was brought in with a large capped elbow, and he (Prof. Pritchard) was told to operate upon it. It had a tumour on the end of it as big as half a water-bottle. He took it out, and in a very short time another tumour formed half as big again as the original one. That was the failure. He knew no better then, and presumably there was nobody who could teach him any better. A short time after that another animal was brought in with a tumour at its elbow, which he took out. The next morning but one after the operation he dressed the outside of the skin all round with biniodide of mercury 1 to 8, and repeated it for three successive days. That was a success. He had done hundreds since, and did not recollect one that had ever failed. Never mind the stitches—the wound need not be stitched at all. The second or third day after removing the tumour the outside of the skin should be dressed with biniodide of mercury and rubbed in for three days—then the tumour would not reform and the wound would heal.

Mr. VILLAR asked whether in the operation upon a stallion for the healing of a flap in the nostrils the Professor then only left the sutures in for 24 or 48 hours.

Prof. PRITCHARD said he left them in for three days, but they were pin sutures.

The PRESIDENT said that he presumed that if the stitches were incorrectly put in the wound would close in a wrong place, and consequently would be a living memorial of bad surgery. Therefore if one did not see one's way clear to put the stitches where they ought to be it was best not to put them in at all.

Prof. PRITCHARD: The wound will come together exactly where you stitch it.

On the motion of Major Nunn, seconded by Mr. Rowe, a hearty vote of thanks was accorded Professor Pritchard for his interesting address.

Prof. PRITCHARD briefly returned thanks, and the proceedings terminated with a vote of thanks to the Chairman.

EXTRACTS AND NOTES.

RABIES.

(Abstract of Lectures delivered by Professor ROSE BRADFORD, M.D., D.Sc., F.R.C.P.Lond., F.R.S., Superintendent of the Brown Institution.)

Gentlemen,—The work of the Brown Institution at the present time is divisible into three main classes. First, there is the hospital side of the institution, under the charge of the veterinary officers, thanks to whom a large number of animals are seen daily and treated either as in-patients or out-patients. Secondly, there is the routine investigation of cases of suspected rabies which takes place in the laboratory of the institution and which has taken place there for the last five years. Previously to that period such cases were only sent there irregularly. Thirdly, there is the research work bearing on the diseases of animals and of man which is conducted in the laboratory either by the professor or by other workers.

In the five lectures which I propose to give in accordance with the provisions of the will of the founder it is my intention to deal in the first two with certain questions in relation to rabies, and in the last three with certain research work on the tsetse fly disease of South Africa.

SOME EARLY OBSERVERS.

Van Swieten in 1771 gave a very good description of the disease and this is of special interest in connection with some of the controversies that have occurred in the last ten years, more especially with reference to the work of Pasteur. It is of interest to remember that Van

(*Continued on p. 547*).

NATIONAL VETERINARY BENEVOLENT, AND MUTUAL DEFENCE SOCIETY.

FINANCIAL STATEMENT DECEMBER 31ST, 1895.

THE VETERINARY MUTUAL BENEVOLENT FUND.

Mr. Edwin Faulkner, Honorary Treasurer, Knott Mill, Manchester, in Account with the Fund.

1899.	RECEIPTS.	£	s.	d.	1899.	PAYMENTS.	£	s.	d.
Jan. 1st.	To Cash at Bankers	258	18	9	Dec. 31.—By Grants and Donations :—				
Dec. 31st.	Mersey Docks and Harbour Board, one year's Interest on Bond for £1,300 at 4 per cent. less tax	50	5	4		K. C. £11 0 0			
						A. L. G. 30 0 0			
						J. R. 5 0 0			
						D. G. H. 10 0 0			
						J. D. R. 5 0 0			
						R. B. 5 0 0			
						C. B. 10 0 0			
							76	0	0
„	Mersey Docks and Harbour Board, one year's Interest on Bond for £600 at 3½ per cent. less tax	18	2	6	„	Cash at Bankers	299	18	1
„	Manchester Corporation Improvement Department, one year's Interest on Mortgage for £900 at 3 per cent. less tax	26	2	0					
„	Corporation of Salford Gas Deptnt. one year's Interest on Loan of £600 at 2⅝ per cent. less tax	15	4	6					
„	Bank Interest	5	5	0					
„	Balance due to Treasurer	2	0	0					
		£375	18	1			£375	18	1

THE VETERINARY MUTUAL DEFENCE FUND.

1899.	RECEIPTS.	£	s.	d.	1899.	PAYMENTS.	£	s.	d.
Jan. 1st.—	To Balance at Bankers	569	19	9	Jan. 1st.—	By Balance due to Treasurer	3	11	11½
Dec. 31st.—	„ Subscriptions received 1899, as per List	140	15	0	Dec. 31st.—	„ Hire of Rooms	0	10	0
						„ Stationery	7	5	6
	„ Bank Interest	11	12	9		„ Solicitor's Costs	5	1	4
	„ "The Hewson Appeal Fund," surplus balance returned	2	12	0		„ Secretary's Postages and Expenses	1	4	0
	„ Balance due to Treasurer	4	6	8		„ Treasurer's Postages and Expenses	0	5	7½
						„ Check Book	0	1	8
						„ "The Hewson Defence Fund," Donation per H. Thompson	10	10	0
						„ Butcher, Litton & Pownall, Accountancy Charges	4	10	6
						„ Balance at Bankers	696	5	7
		£729	6	2			£729	6	2

INVESTMENTS.	£	s.	d.
Mersey Docks and Harbour Board—4 per cent. Bond No. 71,621, dated July 2nd, 1880; Repayable 1st July, 1900	1,300	0	0
„ „ „ 3⅛ per cent. Bond No. 77,534, dated March 6th, 1883, Repayable 27th March, 1911	600	0	0
Manchester Corporation Improvement Department—3 per cent. Mortgage, No. 460, dated October 2nd, 1890; Repayable 29th September, 1900	900	0	0
Salford Corporation Gas Fund 2⅝ per cent. Mortgage Bond, No. 2,233, dated January 13th, 1897; Repayable 13th January, 1900	600	0	0
	£3,400	0	0

We have examined the above written Account, and certify the same to be correct.

ALFRED H. POWNALL, F.C.A.
JNO. B. WOLSTENHOLME.

20th January, 1900.

SAML. LOCKE, *Hon. Sec.*

Swieten recognised that there were two forms of the disease—a furious form and a paralytic form. So that more than 100 years ago the paralytic form of rabies was recognised and described. Of course, it was not then described as fully as we know it now, but it was definitely recognised, and that is a point of very great interest when we remember that a few years ago—I think in 1885—when a well-known case of paralytic rabies occurred in the human subject it was asserted by many persons, well-intentioned, no doubt, that it was a new disease which had been produced by Pasteur's methods, and that it was not a disease that was known to the older writers. A French observer, Gohier, made a considerable number of observations on rabies, and he was one of the earliest, if not the earliest, to experiment on rabies in the laboratory. Many of his observations have stood the test of time, but one of his facts—or rather one of his supposed facts—I think has not stood that test. He thought that the carcase of the animal was highly infective and that the disease was spread in that manner. Subsequently to 1811 we come to Grüner who in 1813 made important observations, and I believe he was the first to determine the fact that the saliva was infective. That, perhaps, is the most important observation that was made from the time of Van Swieten. Van Swieten's observations, recognising that the disease existed in two forms, was a very important one, and Grüner's observation that the saliva was infective was similarly a most important one. The next observer who worked extensively at the subject was Berndt, whose work was published in 1822, and who confirmed the observations of others and who corroborated the original observations of Van Swieten that the disease existed in two forms—a furious form and a tranquil form. I believe he was the first to use those terms, the tranquil form now being usually spoken of as "dumb rabies." That brings us to the year 1822. The next most important observation was that of Galtier in 1871, who described the disease in rabbits. Inasmuch as the disease in rabbits is totally different in its main symptoms to that in dogs, the recognition of it in the rabbit and the description of the typical symptoms in that animal was a very distinct advance. In recent times the most important observations up to the time of Pasteur were those of Nocard and Paul Bert in 1880. These observers showed that if the saliva was filtered through plaster the virus remained on the plaster; in other words, they showed that the poison of rabies—the exact nature of which we do not know even at the present time—was a particulate virus.

Pasteur's Work.

Then we come to the work of Pasteur. In five years—and that was about the time that Pasteur's work on rabies extended over—in speaking of Pasteur I, of course, mean the work of Pasteur and his pupils—the additions to our knowledge of rabies were far greater than those of all other observers put together. That affords an illustration of what I said a few minutes ago, that rabies is perhaps the most striking instance of a few years' experimental work in the laboratory adding more to our knowledge than, I was going to say, centuries of accurate and careful observation. Pasteur's most striking and important discoveries in connection with rabies may be said to be four in number. He demonstrated first of all that the virus was not only in the saliva but that it was also in the nervous system. That was the first fact which Pasteur and his pupils showed, and they proved that not only was the virus present in the central nervous system but that it was present also in the peripheral nervous system. It had been suggested—I do not know when, but some considerable time ago—that this was so in the case of tetanus, and long before the bacterial origin of tetanus was known it was surmised that the poison of tetanus travelled by the nerves. In the older surgical writings observations are recorded with reference to the part played by the irritation of small nerves in wounds as a cause of tetanus. It is in rabies, and as a result of Pasteur's work, that we have our best instance of the poison of a fatal disease producing its effects by acting on the nervous system, and not only producing its effects by this means, but apparently reaching the central nervous system by travelling along the peripheral nervous system. The foundation for that view of the pathology of rabies was laid by Pasteur's discovery that the poison was found in the central nervous system and also in the peripheral nervous system.

Pasteur's second discovery was the ease with which the disease could be directly inoculated provided that it was inoculated in the nervous system. A great many observers had previously tried to inoculate rabies. Some had succeeded and some had failed, but the fact that they used the subcutaneous method of inoculation or the method of simply rubbing the virus on a raw surface in the skin is the probable explanation of the very great difference in the recorded facts. Some observers had even gone so far as to say that the saliva was not infective; others found that the saliva was infective; others found certain organs to be infective and not other organs. There were great discrepancies largely dependent on the fact that the method of inoculation, as we shall see later, was not quite a satisfactory one. Pasteur added very greatly to our knowledge by showing that the inoculation into the nervous system was the best way of communicating rabies for experimental purposes from one animal to another; and the method which Pasteur invented and elaborated with reference to rabies has, of course since his time, been used, not only with so much success in the case of rabies but with certain success in the study of the pathology of other diseases. Both those facts Pasteur observed in 1881. Thirdly, in 1884 he made his first attempts, or at any rate he got his first results in his attempts, at attenuating the virus. He proceeded first of all on the lines he had pursued in studying similar problems in other diseases—viz., by seeing the effects of inoculating a series of animals of different species. After trying a large number of animals Pasteur found that if a succession of monkeys were inoculated the virus became attenuated, and finally, after passing through a considerable number of monkeys, that the poison did not produce such marked effects on dogs as it had originally produced. Conversely he found that by passing the virus through a series of rabbits it was increased in potency. But he very soon came to the conclusion that he could not hope to get curative effects or to elaborate any means of treating the disease by the results obtained in monkeys. Lastly, in 1885, he elaborated the very remarkable method which goes by his name for treating the malady, or more especially for preventing the malady in animals and in man. I do not propose to discuss that at any length; but you will remember that it consists in getting a virus of a certain fixed strength which he called *le virus fixe*, and this he obtained by passing the disease through a succession of rabbits—I think about 100—until the period of duration of the disease and the period of incubation of the disease are both absolutely fixed. It is well known that if you take the sporadic cases of rabies which occur in the streets sometimes the virus from one dog will produce a malady with a short incubation period, and the disease will run a rapid course, while in another case it will have a long incubation period and may run a very much slower course. Pasteur thought that it was essential to work with a virus of constant strength and he obtained this virus of constant strength by passing it through a succession of rabbits. Having done that he found that the virus was attenuated by drying, so that if the spinal cord of the rabbit be removed and dried he found that in the course of a fortnight the virus had completely lost its strength. Those who have seen Pasteur's Institute may remember the darkened room which is kept at an equable temperature, in which the spinal

cords of these rabbits are dried. Therefore, by preparing separate extracts of these spinal cords every day extending over a period of a fortnight a virus of different degrees of potency could be obtained and that forms the basis of his method of treating the disease, which method I do not propose to discuss now.

Since 1885 our knowledge of the nature of rabies has not really greatly progressed. A number of observers have recorded that they have isolated an organism in cases of rabies, but at the present time there is no consensus of opinion amongst bacteriologists with reference to this question. I think it cannot be said that the identity of the organisms of rabies has been clearly established, although, of course, there are many strong arguments in favour of the disease being of microbic origin, quite apart from the observation of Nocard and Paul Bert which I have mentioned, that filtration of the saliva through plaster removed the virus.

That is a very short historical sketch of the progress of a portion of our knowledge with reference to the nature of rabies. There is one other point which one would like to go into before dealing with the immediate question of diagnosis, because one cannot really discuss the diagnosis without first discussing this. I refer to the question of the animals that are liable to be affected by the disease.

Liability to Infection.

Rabies, as you know, is a disease which is common to man and to animals, but all animals are not affected with equal ease nor does the disease run the same course in all animals. It affects all the mammalia and it also affects birds, but it is very doubtful whether it affects the amphibia. It is said by one observer to do so, but others have been unable to confirm his observations. So we may say that the disease is limited to the mammalia and to birds. As a matter of fact, in the case of birds it is mainly seen as the result of experimentation. It is very difficult, as would occur to anyone, for a bird to be inoculated from a bite for obvious reasons; amongst other reasons is the fact that the feathers would probably remove the virus, so that the question of the disease affecting birds is not one of any great practical importance, although there is a considerable degree of theoretical interest about it, because birds are more refractory to rabies than are mammals. In mammals, as you know, the carnivora are those which are especially affected, and you know also that it is a disease which affects not only domestic animals but also wild animals. Some of the most serious outbreaks of rabies, both in animals and in the human subject, have occurred owing to its prevalence in wild animals. As regards wild animals, those of most importance from our point of view are wolves and foxes. Wolves, of course, have been a frequent source of rabies, both in France and in Russia, more especially in Russia, and it is not uncommon, I think, for outbreaks of the disease in this country to be associated with its prevalence in foxes. As regards other animals, the disease is not uncommon in cattle and it is more common in horned cattle. It is more common in cattle than in goats. It is not very rare in horses, but it is much rarer in horses than in cattle. It is exceedingly rare in pigs. A suggested and a probable explanation of this fact is that there is a very large amount of subcutaneous fatty tissue in the pig, and, as we shall see later, subcutaneous fat is not at all suitable for the inoculation of rabies. Therefore, the disease is common in dogs and cats, not uncommon in wolves and foxes, but in other animals it is rare—most rare in the pig, less rare in the horse, and least rare in cattle.

Prevalence.

Another interesting point in reference to rabies is that, like many other diseases, perhaps nearly all diseases, it exists in certain localities and is very difficult to eradicate from those localities. Then at intervals of longer or shorter duration there are epidemics of rabies. In this country, for instance, Lancashire has long had an evil repute as a district where rabies is more or less endemic, and the same is true of Ireland, and of certain districts in Germany and France. As regards epidemics, there was a very severe epidemic indeed in France and in Germany, and, in fact, in the whole of the western side of Europe, in the years from 1720 to 1723. In this country the best known epidemics of rabies—of course, I am speaking of rabies in animals—were from 1754 to 1762. There was a very severe epidemic in Lancashire in 1864. Then, more recently, there was what I think I may call a severe epidemic in the year 1894-96, and in 1895 and 1896 there was a very considerable amount of rabies in London. In 1897 there was not so much, in 1898 still less, and this last year I think I am correct in saying that there were no cases of rabies, anyhow none came under my observation. There have been epidemics amongst dogs and cats, but in addition to that in this country there have been severe epidemics amongst deer. The most interesting and extensive epidemics amongst deer have been these. In 1795 there was an attack of rabies amongst the deer in the Royal Parks, then there was a severe epidemic in 1872 in herds of deer belonging to the Duke of Westminster, and it will be within the recollection of most of you that there was a very severe epidemic in 1886 among the deer in Richmond Park, where amongst 1200 animals 264 were affected with rabies. Those are the principal epidemics of the disease which have occurred in this country in recent times.

There are certain countries in which rabies is unknown, and amongst these countries are Australia and Norway. There are other countries where outbreaks of rabies have occurred as the result of the importation of dogs, and, it is said, more especially of sporting dogs. There is an impression that is very current that rabies is a malady which is especially apt to occur amongst uncared-for dogs, whereas that is not at all the true state of affairs. Rabies is a disease which may occur in any dog, and we are always struck with the considerable number of cases in what are commonly called sporting dogs which are sent to us for diagnosis. There are three epidemics which have been laid to the charge of sporting dogs taken from this country. One of these was in the Mauritius in 1813, one was in Malta in 1847, and one was at Shanghai in 1867.

Method of Communication.

How is the malady communicated? In the great bulk of cases it is communicated by bites, and that is one of the very reasons why the prevalence of it amongst the carnivora is so important for us to recognise. When it is communicated by a bite you know that, on the whole, the cat is the more dangerous animal, owing to the fact that the cat is liable to "fly," as it is said, to the more exposed part of the body—the face, for instance—and also, perhaps, owing to the fact that it is well known that bites in the face, for reasons we will consider later, are more dangerous than bites in other parts of the body. Rabies, perhaps, can also be communicated by licking—that is to say, by licking a raw surface on the body. But it must be always remembered that the virus of rabies is not one that is very easily inoculated, and that it is much more difficult in the laboratory to communicate rabies by smearing a raw surface with the saliva than it is by injecting it hypodermically. It is more difficult to communicate it hypodermically than by injection into the muscles, and it more difficult to communicate it by injecting it into the muscles than by injecting it into the eye. Further, it is more difficult to communicate it by injection into the eye than by introducing it subdurally. So that I do not know that it can be said that it has been accurately proved that it can be communicated by licking, but at any rate it is probable. It is said that when people are bitten by a rabid animal

from 10 to 20 per cent. of the sufferers succumb to rabies. That is a matter on which it is most difficult to get statistics. Anyone who has had occasion to look the matter up will find very varying statements with reference to this point. Apparently, however, the balance of evidence is in favour of that view. A French observer, Leblanc, who collected a great number of accurate statistics—accurate, that is, as far as one can see—stated that the percentage was about 16. There is a very celebrated case quoted by Hunter where one mad dog bit 21 people and only one person succumbed from the disease. That has been sometimes quoted as showing that the mortality of the disease is only 5 per cent., but of course that is erroneous. The disease can also be communicated by infection at post-mortem examinations; and there have been instances of that amongst veterinarians. I am not aware of any recorded instance of such infection by the human subject—I mean of a human being having been infected by doing a post-mortem examination on a case of rabies in man—but there are cases on record in which it has occurred to veterinary surgeons. The third way in which it is said to be communicated is by the ingestion by animals of the flesh of other animals which have died from the disease. Here, again, there has been great controversy, many observers having failed to communicate the disease in that way and others having succeeded. Of course, an obvious explanation occurs—viz., that the question as to whether an animal contracts rabies or not by eating the flesh of an animal dying from rabies is whether there is any lesion in the throat or alimentary canal or not. Fourthly, it has been shown that it can be communicated by the milk of a suckling animal or of a suckling human being. There is a case recorded in the West Indies where an infant was suckled by its mother who was suffering from the early stages of rabies and the child contracted the disease and died from it before the mother. It has been proved in the laboratory that the milk of suckling animals, and human milk in cases of rabies in woman, is infective. Still, that is a point of only scientific interest.

Lastly, it has been shown in the laboratory that it can be communicated through the mucous membranes. The French observer, Galtier, has show that if the virus of rabies be put into the conjunctival sac or into the interior of the nose a certain proportion of the animals so treated will succumb to rabies. These are really only matters of scientific interest. For all practical purposes the disease is communicated by biting, and you know that the danger of a bite depends very largely upon the part of the body upon which it is situated, quite apart from the question of clothes. Of course, it is obvious that bites in the legs and in the feet are less dangerous than bites in the hand or face, owing to the probability of the saliva being wiped off by the clothes or the boots. But, apart from that, there is, apparently, evidence that the inoculation of the virus into the face, for instance, is more liable to be followed by a rapid onset of the disease than if it is inoculated in the legs. The well known experiment of Roux in which an animal was taken, the spinal cord was divided, and then the virus of rabies was inoculated into the hinder portion of the animal, throws some light on this question. Under those circumstances it can be shown that the lower segment of the spinal cord, separated from the central nervous system, will contain the virus in great quantity and in a high degree of virulence at the time when the upper segment does not contain it. And so it has been thought that the proximity of a part to the central nervous system does play a part and is a point of importance both in the progress and in the rate of onset of the malady. So that a wound of the face, inasmuch as it near the central nervous system, is for that reason more dangerous. There are one or two other general points which I may mention.

Nature of the Virus.

First of all, let me say a few words with reference to the virus. I have already said—perhaps more than once—that rabies is a remarkable disease; but there is nothing, perhaps, in which it is more remarkable than in the nature and in the situation of the virus. We have seen that the virus is present in the saliva. We have also seen that it is present in the central nervous system and in the peripheral nervous system, but that it is not present in the blood. All observers are agreed that the blood of animals suffering from rabies is not infective. It is apparently not present in the bulk of the tissues and organs of the animal. It is not present in the muscles. It is not present in the liver or the spleen. It is present in the glands, such as the salivary glands, the pancreas, the lacrymal gland, the suprarenals, and the mammary gland; and it has always seemed to me, since I have been working at the subject, that that is one of the most striking phenomena in pathology—that this potent virus should be present in the central nervous system and in the secreting glands but should be absent from the blood and from the tissues such as those of the liver and the spleen. It is present, as I mentioned a minute ago, in the milk of suckling women; it is not present in the urine. It is said to be present in the seminal fluid, but in this there have been discrepancies among different observers. However, there have been no discrepancies as regards the saliva and those glands I have mentioned nor as regards the milk. Then, as I mentioned a few minutes ago, the virus is slowly destroyed by being dried in the air; and it takes about a fortnight for it to lose its virulence under those circumstances. When exposed to the air and to sunlight it loses its virulence in about 14 hours. In water it will maintain its virulence for as long as 40 days—for from 20 to 40 days—and in glycerine (which is a point of some importance with reference to the technique of inoculation) it will maintain its virulence for as long as a month. Then an important point where one has to investigate suspected cases of rabies is the influence of putrefaction on it. It has been found by French observers that the virus remains potent in the carcass of a dog which has been buried for 44 days; it has been found potent in that of a rabbit 27 days after burial and in that of a sheep 21 days after. So we have periods ranging from three to six weeks. My own experience does not quite agree with this. I know that I have failed twice to detect the presence of rabies in an animal which undoubtedly died from the disease where the carcass of the dog had been buried only a few days and had then been exhumed and sent to me. In one of those cases—a case in which a man had been bitten by the dog in the ear and had died from hydrophobia, so that one had very clear evidence quite apart from the suggested diagnosis of rabies from the symptoms in the dog—inoculation from that dog were quite ineffective. That was probably owing to the presence of putrefaction. It occurred in the hot summer months. But the French observers—and that is the only discrepancy between their results and such results as I have obtained—have always laid stress on the point that ordinary putrefaction does not prevent the recognition of the presence of rabies in a buried carcass. Of course, you may often fail to detect the presence of rabies in suspected cases if there happen to be other organisms present, especially organisms capable of causing septicæmia owing to the obvious fact that septicæmia runs a more acute course than rabies, and so perhaps both diseases may be communicated, but the animal dies from septicæmia before the symptoms of rabies have become manifest.

Period of Incubation.

The only other point I wish to mention before discussing the diagnosis in full is the question of incubation. The diagnosis very often turns on incubation.

The incubation period of rabies is known to vary greatly in different animals. I have prepared here a list of the more important. Most observers are agreed now that in man the incubation period of rabies lies between 20 days as a minimum and 60 days as a maximum and that it is rare after three months and very rare, if not unknown, after six months. One is perfectly aware of cases that have been mentioned in which the disease is said to have occurred after as long a period as 18 months, but I believe that the modern work on the subject has rather tended to the belief that there must be some error in those cases. But it is the minimum period which is of importance, because, as we shall see later, one of the important points in the diagnosis in the human subject is to distinguish rabies from a functional disturbance simulating rabies, which has been called by some observers "lyssophobia," and one of the points on which great stress is laid is the incubation period. It is of some importance to recognise that the disease in the human subject does not occur at a less period than 20 days after the bite. In a dog the incubation period is from 15 to 60 days, and at least half the cases in the dog occur in less than a month after the bite or after exposure to contact with an animal suffering from rabies. In other animals the incubation period, from the point of view of practical medicine, is not of very great importance. In cattle it varies from one to three months; in sheep from 15 to 30 days; and in the horse from 15 to 60 days. Therefore, if you eliminate cattle, you may say that the incubation period in most animals varies from 15 to 60 days.

Diagnosis.

Now to come to what I propose to deal with in detail in my next lecture—diagnosis—I will only say now that the diagnosis of rabies can be considered from three points of view. You have, firstly, the clinical diagnosis, which is on the whole the most important, but it is not always the diagnosis which one can make, though it is the one which it is most desirable to make, especially in the case of an animal, owing to the loss of time that must necessarily occur if the diagnosis be made by any other method. Secondly, there is the diagnosis by post mortem examination. Thirdly, there is the diagnosis to be made by experimental means. Now it is a very obvious thing, but it is sometimes forgotten, that the clinical diagnosis, especially in animals, is most readily arrived at by the question of the period of survival after the onset of the symptoms. This is a matter which I have mentioned here before and I will do so again. If a dog which is suspected of rabies bites an individual, that individual is, of course, most anxious to know whether the dog has or has not got rabies. It is a matter of the most vital importance to him—a matter of life and death. If that dog be killed, and it is probably the case in 99 cases out of 100, then an interval of three weeks at least must elapse before it can be stated positively whether the dog had or had not had rabies. On the other hand, if the suspected dog be isolated the question can probably be answered with certainty in from two to four days, so that the clinical diagnosis of rabies, the diagnosis in the living animal, is a matter of very great importance. The tendency nowadays is rather to rely on the experimental method. I should be the last to decry the value of that method, and it may be the only means by which you can say that the dog has or has not got rabies, but in many cases very valuable time is lost by killing the animal and investigating it experimentally. I think you will at once see how, if the animal be killed, it may be impossible to diagnose the disease in a shorter period than three weeks. It is for this reason—that the post-mortem signs of rabies, both in the human subject and in animals, are not very marked. They are at the best rather equivocal signs, especially in animals, and, further, the most characteristic post-mortem signs of rabies in the dog are not developed until the malady has been allowed to run its full course. If the animal be killed on the very first day after it has become strange in its behaviour the post-mortem examination may be absolutely negative: it may show that the dog is apparently perfectly well. That is clearly a very serious fallacy. Therefore, the clinical diagnosis of the disease is a matter of the greatest importance. The difficulty of clinically diagnosing the disease in the dog lies first of all in the difficulty owing to the symptoms, as rabies resembles other diseases in the dog, and, secondly, there is great danger in keeping a mad dog alive If, however, the dog can be isolated so that it cannot do any harm it would be wiser to do that than to kill it, even if it has bitten anyone, because under those circumstances, in two or three days, perhaps less, you will have very strong presumptive evidence of the existence of rabies, simply by the death of the animal with the characteristic symptoms of that disease.

In my next lecture I will consider the details of the diagnosis, both clinically and by post-mortem examination, as well as the diagnosis by the experimental method, and I will more especially deal with the fallacies that are liable to occur in the experimental method. —*Lancet.*

THE RESTRAINT OF DANGEROUS ANIMALS.

Appeal—Damages.

The case of Marlow *v.* Ball recently came before the Court of Appeal, composed of Lords Justices A. L. Smith, Collins, and Romer, on the application of the defendant, for judgment or a new trial on appeal from the verdict and judgment dated November 10th, 1899, at the trial before Mr. Justice Phillimore and a special jury. It appeared from the statement of Mr. Montagu Lush, who appeared in support of the application, that the plaintiff, a labourer, visited an exhibition of wild animals at Chatterton Gardens, near Oldham, on May 26, 1899. The case for the plaintiff was that he paid 6d. to go into the gardens to see the animals, and on walking along he found the door of a stable open in which were four zebras. They had separate stalls to the manger, and were secured by the head by means of a rope or chain attached. The plaintiff's account was that he went up to one of the zebras and stroked it. The animal resented this, and kicked out. When the plaintiff walked towards the head of the stable the zebra kicked the partition down which separated it from the next zebra. The plaintiff fell into the next stall, where another zebra bit his hand. The result was that the hand had to be amputated. The plaintiff then brought the present action against the defendant, alleging that the accident was caused through the negligence of the defendant. The jury awarded the plaintiff £175 damages, and judgment was entered accordingly. Hence the present application.

Mr. Montagu Lush said it was surmised that a visitor to the Gardens had left the stable-door open. There was no evidence that the accident was caused through the negligence of the defendant.

Mr. Samuel Evans, for the respondent (the plaintiff) contended that it was not necessary for the defendant to prove negligence at all in such an action as the present. A person who kept dangerous animals must keep them secure from committing injury.

In the result the appeal was allowed, and judgment entered for the defendant, who did not ask for costs.—*St. James's Gazette.*

MOSQUITOES AND MALARIA.

In a paper read by Mr. Patrick Manson, the lecturer said the geographical distribution of malaria was determined by the geographical distribution of the mosquito. Fortunately, not all mosquitoes were transmitters of the germ. In the case of those who were, the process was this—after the germ had been ingested by the mosquito, it had to leave the insect's stomach, pass into its tissues, undergo many evolutionary changes there, and finally find its way to the poison gland of the insect, and so to the human body when the mosquito proceeded to make its next meal on a human victim. In England the gnat did the work. Quinine killed the germ as surely as arsenic killed the rat. Malaria could be stamped out in a community by all round free drugging with quinine. The Colonial Office had already, in conjunction with the Royal Society, sent a commission to Central Africa, and to the West Coast, to study malaria on the spot; and it had now authorised him to make, in connection with the London School of Tropical Medicine, an experiment on the practicability of preventing malaria. A hut was to be erected in the most malarial part of the Roman Campagna, and it was to be rendered mosquito-proof by a wire gauze door and window screens. Two skilled observers and their two servants were to live in that hut from May till October of this year. They would be at liberty to go where they liked during the day, but for an hour before sunset to an hour after sunrise they were to be in the hut. If those men escaped fever, it would be an absolute proof that by very simple and inexpensive means the human body could be protected from the germ, for to sleep for one night unprotected on the spot was, it was said, to incur the certainty of contracting a malarial fever of a virulent type. Another experiment would be made. Mosquitos raised from the egg in the laboratory, which would have had no opportunity of picking up the germs, were to be fed in Rome on patients in whose blood the benign tertain malaria parasite had been ascertained by the microscope to be present. Those mosquitos were to be transferred to London, and fed on vegetable juices till such time as the malaria germs would have arrived at the venom gland. The insects were then to be liberated in a small mosquito house, in which one or two Englishmen who had never left this country were to sleep. "We expect," said the lecturer, "that in about ten days after this these Englishmen will develop malaria fever." Volunteers, he added, have already been secured.

MEAT SEIZURE AT RYDE.

At the Ryde Police Court, on 13th inst., James Loader, butcher, carrying on business at 149, High Street, was summoned for exposing for sale meat unfit for food on the 8th February. The Town Clerk (Mr. C. G. Vincent) prosecuted, and Mr. E. J. T. Webb (of Portsmouth) defended.

Edwin Arnold, cattle dealer, Elmfield, proved selling to the defendant's son a cow, which had been medically treated for a cold in the lung, for £1. It was killed at his place by young Loader, as it had hurt its leg, and he would not risk driving it to defendant's slaughterhouse. He removed the carcase openly to defendant's shop, and the latter paid him the £1.

Mr. A. Woodward, Medical Officer of Health for Ryde, deposed that on the 8th February he saw two forequarters of beef in defendant's slaughterhouse. From their appearance he came to the conclusion that the animal had been suffering from pleurisy. At defendant's shop he found similar meat in joints and pieces, and defendant admitted that he had sold some. In his opinion the meat was unwholesome and unfit for food. It would most likely have a deleterious effect on persons eating it. The meat was afterwards condemned by the magistrates. In cross-examination the witness stated that although there was a difference between pleurisy and tuberculosis he did not consider that an animal suffering from either ought to be eaten.

Mr. J. Vickers Blake, M.R.C.V.S., gave confirmative evidence.

In defence Mr Webb pointed out that during the 30 or 40 years the defendant had been in business he had never had to answer a serious charge of this kind. He urged, however, that the case had been exaggerated, and that the medical evidence was not sufficient on which to convict. To say that an attack of pleurisy made the whole carcase unfit for food was absurd. He further urged that it must be shown that it was to the knowledge of the defendant or his servants that the meat was unfit for food. If anyone ought to be prosecuted over this matter Mr. Webb suggested that it was Arnold.

The magistrates after retiring for some time, announced through the Chairman (Mr. T. Dashwood) that they unanimously felt that the defendant knew that the meat was not suitable for human food. It was a very grave offence, and although it was not proposed to inflict the maximum penalty defendant would be fined £10 and costs, £2 4s. 6d., or one month's imprisonment. Defendant was allowed a month wherein to pay.—*Southern Daily Mail*

Horses in South Africa

One can only hope that the War Office authorities realise fully how absolutely our Army in South Africa is dependent on its cavalry and mounted infantry, and how absolutely helpless these forces are without horses. The necessity for making up the constant drain in horses is even more necessary than that for replenishing the casualties made in the ranks of our men. At the present moment a horse is worth more than a man; and no surer proof could be given of the incompetence of the War Office than if a sudden outbreak of horse sickness, or the fatigues of a march on Bloemfontein found us without horses The Boer supply of horses is strictly limited; but we have absolutely unlimited supplies to draw on from all the world over. Our present success is entirely due to the rapid movements of French's Division, which the infantry admirably supported, but without which the infantry would have been perfectly useless.—*The Times.*

The Undermanning in the A.V.D.

As I remarked a week or two ago, it is certainly full time for the Veterinary Department of the Army to be made more attractive, considering that there are at present twelve vacancies, for which it is impossible to procure eligible candidates. It may be hoped that the conditions of this branch of the Service will at once be improved, and the matter ought to have been dealt with long ago, but some of the War Office people have notoriously taken particular pains to place the staff of the Veterinary Department at a serious disadvantage in comparison with other branches of the Service.—*Truth.*

Slander by a Doctor.

Damages amounting to £100 were awarded to Arthur Barrett, butcher, of Harewood, at Leeds Assizes, March 16, in an action for slander brought by him against Dr. Septimus Montague Hebblethwaite, of the same village. The defendant accused Mr. Barrett of having sold him some diseased meat, and also called him a rogue. It was shown by Mr. Mason, a veterinary surgeon, that the carcase from which the meat was supplied was perfectly sound.—*Morning Post.*

ARMY VETERINARY DEPARTMENT.

Vet.-Surg. R. C. Matthews sailed in ss. Siberian from Albert Docks on Wednesday.

APPOINTMENT.

Mr. CECIL A. REID, M.R.C.V.S., of Mandeville, Jamaica, has been appointed veterinary adviser to the Government of British Guiana. Mr. Reid's address will be Georgetown, Demerara, British Guiana.

PROFESSOR METTAM, of the Royal (Dick) Veterinary College, on Monday last gave the fifth of a series of veterinary lectures which the Teviotdale Farmers' Club have arranged to be delivered at Hawick. There was a good attendance. Professor Mettam dealt with the prevention of bacterial diseases.

CORRESPONDENCE.

THE FORTHCOMING ELECTION OF CANDIDATES FOR THE COUNCIL.

Sir,

Does the Royal College of Veterinary Surgeons intend to advertise in the professional journals at an early date the vacancies arising on the Council of the said College, and to be filled by election of candidates?

Again, are the electors going to return men who have transgressed the laws and bye-laws of the said College by advertising themselves, allowing themselves to be advertised in this or that illustrated paper, or by using Royal and other coats of arms not their own or that of the said Royal College?

I am afraid the present Council has been lax in many things, especially by allowing some men, including some of their own number, to advertise while preventing or frightening others from doing so. It puts one in mind of old boyish saying "I am the king of the castle, get down you dirty rascal." Many of its members do not come up to the standard of those of fourteen or fifteen years ago. We want men of position on the Council, men who are above self motives, men who love the welfare of the profession at large and not their own position. We also want men of good social position to represent us, men who will inspire the public with confidence, men of talent. Professional brothers! the power is with us, and let us use it. Don't be apathetic now and grumble afterwards.

PURGANS.

FARRIER-SERGEANT OR VETERINARY OFFICER?

Sir,

As one who knows Mr. Wallace well, may I be permitted to say a few words in his defence during his absence in South Africa. Having a good deal of professional work to do amongst the horses of the 34th Company of the Imperial Yeomanry, in which Mr. Wallace was farrier-sergeant, I saw him every day for nearly two months. Mr. Wallace never pretended to be a veterinary surgeon, and I have heard him time after time, when asked if he was a veterinary surgeon, reply in the negative. He said he was a doctor of veterinary science and held a Canadian certificate. This was common knowledge amongst the officers of the Company in which he was farrier-sergeant. Mr. Wallace is a very energetic man and did a lot of good professional work amongst the horses of his Company, and I have no doubt his Commanding Officer duly noted this, for he subsequently offered the appointment of veterinary officer to the battalion to Mr. Wallace, who very properly accepted it. Therefore I feel sure that as Mr. Wallace never falsely represented himself to be what he was not, no prosecution against him by the College would succeed. Besides this, there is another side of the question. It would be a very mean action in a time like the present for the R.C.V.S. to prosecute a member of the Canadian Veterinary School who has gone to the front in a professional capacity when Canada is universally recognised to be rendering such valuable assistance to us during the war.—I am, sir, yours obediently,

EDWARD SEWELL, M.R.C.V.S.

[We are glad to hear that this lawless appointment is only due to the gross ignorance of a commanding officer.]

SANITARY INSTITUTE.

Sir,

The tone assumed by Mr. Moran, F.R.C.V.S. is certainly wanting in taste and tact. His letter implies that the Sanitary Institute has done something inimical to the veterinary profession, and that by way of retaliation we should carp and cavil or even make uncivil remarks about that body. Had Mr. Moran been better informed (it is well before writing to know something of your subject) he would not have required to ask how men obtained their knowledge for the meat inspector's certificate. As a fact they have to produce evidence of at least three months practical work in a slaughter house. The Institute has more than one veterinary teacher. The University of London, the Royal College of Veterinary Surgeons and the Sanitary Institute all grant certificates, but they do not all teach.

Mr. Moran asks what is the use of the teaching at veterinary schools if our graduates are not considered competent to put their knowledge into practice? The question is one that only Mr. Moran has had the acuteness to ask. He then states that "some of our members appear to support this idea." I am afraid that Mr. Moran relies entirely upon his imagination and ignorance for this surmise. Perhaps he would oblige with facts instead of asking absurd questions. The matter of meat inspection is easily understood by any man who will take the trouble to enquire and who possesses the necessary intelligence.—Yours obediently,

AN F.R.C.V.S.

THE APPEAL CASE AT BRIGHTON.

Sir,

I am sending a list of subscriptions received since last week's issue of *The Record*.

	£	s.	d.
J. F. Simpson, Maidenhead	1	1	0
F. G. Edwards, Chester		10	6
R. C. Edwards, Chester		10	6
J. H. Wilson, Newbury	1	1	0
T. B. Bindloss, Long Sutton		10	6
Total to March 17th	£24	1	6
	£27	15	0

GERALD BLOXSOME.

15, Goldsmid Road, Hove, Brighton.
March 21st.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED.—Major Nunn, Messrs. J. W. Malcolm, Gerald Bloxsome, H. Gray, H. S. Elphick, A. Whicher, F. G. Reynolds, R. H. Merrett. *Report on Injurious Insects*, Miss E. A. Ormerod; *The Kentish Gazette*, *The Londoner*.